CLAIMS

What is claimed is:

1. A method for evaluating the severity of congestive heart failure (CHF) within a patient using an implanted medical device wherein the patient also exhibits Cheyne-Stokes Respiration (CSR) caused by CHF, the method comprising:

detecting a periodicity associated with CSR in the patient; and

evaluating the severity of CHF within the patient based on the periodicity.

2. The method of claim 1 wherein detecting the periodicity is performed to detect a time period representative of periodic breathing during CSR.

3. The method of claim 2 wherein detecting a time period associated with CSR for the patient comprises:

detecting an episode of CSR; and

determining the average duration of periods of apnea during the episode of CSR, determining the average duration of periods of breathing between the periods of apnea during CSR, combining the average duration of periods of apnea with the average duration of periods of breathing.

4. The method of claim 3 wherein determining the average duration of periods of sleep apnea during CSR and determining the average duration of periods of breathing between the periods of sleep apnea during CSR are performed using on one or more of thoracic impedance, AV delay, and R-R oscillations.

5. The method of claim 1 wherein determining the severity of CHF within the patient based on the periodicity comprises:

comparing the periodicity associated with CSR against a set of values indicative of the severity of CHF; and

storing a value indicative of the current severity of CHF in a memory.

6. The method of claim 1 and further comprising determining whether the patient is asleep.

7. The method of claim 1 further comprising delivering therapy to the patient based on the severity CHF.

8. The method of claim 7 wherein an implantable drug pump is provided and wherein delivering therapy comprises delivering CHF drug therapy to the patient using the drug pump and wherein the dosage or the type of drug is selected based on the degree of severity of CHF.

9. The method of claim 1 wherein delivering long-term therapy in response to the detection of frequent episodes of CSR-CHF comprises:

delivering overdrive pacing therapy to the heart of the patient with the aggressiveness of overdrive therapy adjusted based on the degree of severity of CHF.

10. The method of claim 1 further comprising verifying that the CSR of the patient is caused by CHF and not central sleep apnea (CSA) based on the periodicity.

11. A method for determining the severity of congestive heart failure (CHF) within a patient using an implanted medical device wherein the patient also exhibits Cheyne-Stokes Respiration (CSR) caused by CHF, the method comprising:

tracking a periodicity associated with CSR for the patient;

detecting changes over time in the periodicity associated with CSR; and

detecting one of progression or regression of CHF within the patient over time based on the changes in the periodicity, wherein an increase in a time period of CSR corresponds to progression of CHF.

12. A system for evaluating the severity of congestive heart failure (CHF) within a patient using an implanted medical device wherein the patient also exhibits Cheyne-Stokes Respiration (CSR) caused by CHF, the system comprising:

a CSR periodicity determination unit operative to determine a periodicity associated with CSR for the patient; and

a CSR periodicity-based CHF evaluation unit operative to evaluate the severity of CHF within the patient based on the periodicity.

13. The system of claim 12 and further comprising:

a CHF therapy controller operative to control delivery of therapy to the patient based on the evaluation of the severity of CHF.

14. The system of claim 12 and further comprising:

an implantable drug pump; and

control circuitry connected to the CSR periodicity-based CHF evaluation unit and to the implantable drug pump and operative to control at least one of the dosage and the type of drug delivered via the drug pump based on the severity of CHF.

15. The system of claim 12 and further comprising

a pacing pulse generator operative to generate overdrive pacing pulses for delivery to the heart of the patient; and

control circuitry connected to the CSR periodicity-based CHF evaluation unit and to the pacing pulse generator and operative to control the aggressiveness of overdrive therapy based on the severity of CHF.